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Log-periodic oscillations in the specific heat behaviour for self-similar Ising type spin systems

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Abstract

The self-similar model of spin-system of the Ising type is formulated. The thermodynamic properties of this model are considered. Analytically and numerically the specific heat of this system is calculated in the nearest neighbor approximation (only the influence of two neighboring spins was taken into account). It is shown that in temperature dependence of the specific heat the log-periodic oscillations are appeared. These oscillations are imposed on the expected power-law dependence.

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